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Ying Feria

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LY, NGHI H

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

| | | | |
|------------------------------|--------------------------------------|-------------------------------------|--|
| Office Action Summary | Application No. 09/661,967 | Applicant(s) FERIA ET AL. | |
| | Examiner NGHI H. LY | Art Unit 2617 | |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/01/2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1, 8, 11, 13, 14, 18, and 20 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685).

Regarding claims 1, 14, 18 and 20, Bella teaches a communications system (see fig.1) comprising: stratospheric platform (see fig.1a, see satellite) having a payload controller (see column 4, lines 4-11) and a phased array antenna having a plurality of

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elements for generating a first beam and a second beam (see column 8, lines 19-25, column 9, lines 8-23, see “beams”).

Bella does not specifically disclose the gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein, a gateway station in communication with the stratospheric platform.

Sherman teaches the gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein (see fig.1 and see column 2, lines 7-12), a gateway station in communication with the stratospheric platform (see fig.1, communication between ground station 11 and satellite).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Sherman into the system of Bella in order to reduce multipath fading in bent-pipe satellite communication system (see Sherman, column 1, lines 8-12).

The combination of Bella and Sherman does not specifically disclose a gateway station comprising first subtracting block for subtracting the second signal from said first signal to obtain the first beam, a gateway station comprising a second subtracting block for subtracting the first signal from said second signal to obtain the second beam.

Tanaka teaches a gateway station comprising first subtracting block for subtracting the second signal from said first signal to obtain the first beam (see fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE

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REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47), a gateway station comprising a second subtracting block for subtracting the first signal from said second signal to obtain the second beam (see fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Tanaka into the system of Bella and Sherman in order to provide a multistage interference canceller equipment and interference canceller method for use (see Tanaka, Abstract).

Regarding Claim 8, the combination of Bella, Sherman and Tanaka further teaches the gateway station comprises a beam generator for generating beam signals (see Sheram, fig.1 and fig.10).

Regarding claim 11, the combination of Bella, Sherman and Tanaka further teaches the gateway station is coupled to a terrestrial network (see Sherman, fig.1).

Regarding claim 13, the combination of Bella, Sherman and Tanaka further teaches the terrestrial network comprises the public service telephone network (see Sherman, fig.1).

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4. Claims 2-4, 15-17, 19 and 21-24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685) and Baier et al (US 6,519,477).

Regarding claims 2, 3, 15 and 21-24, the combination of Bella, Sherman and Tanaka teaches a communication system of claim 1. The combination of Bella, Sherman and Tanaka does not specifically disclose weighting the second signal with a first weight prior to subtracting the second signal from the first signal.

Baier teaches weighting the second signal with a first weight prior to subtracting the second signal from the first signal (see fig.5, the weights W1, W2, W3 and W4, prior to box "interference Cancellation").

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Bella, Sherman and Tanaka in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baier, column 1, line 66 to column 2, line 2).

Regarding claims 4, 17 and 19, the combination of Bella, Sherman and Tanaka teaches a communication system of claims 1, 14 and 18. The combination of Bella, Sherman and Tanaka does not specifically disclose the first weight is a function of user position files.

Baier teaches the first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant's specification

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page 10, lines 12-18 merely recites “the user position files”. However, it fails to further define what a “the user position files” is. Therefore, Baier does indeed teach Applicant’s claimed limitation with a broadest reasonable interpretation).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of the combination of Bella, Sherman and Tanaka in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baier, column 1, line 66 to column 2, line 2).

Regarding claim 16, the combination of Bella, Sherman, Tanaka and Baier further teaches performing said step of subtracting said second signal from said first signal to obtain the first beam in a first subtracting block in the gateway station, and performing said step of subtracting said first signal from said second signal to obtain the second beam in a second subtracting block in the gateway station (see Tanaka, fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47).

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5. Claims 25 and 26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Sherman (US 5,966,371) in view of Tanaka et al (US 6,157,685) and further in view of Baier et al (US 6,519,477).

Regarding claims 25 and 26, Sherman teaches communications system comprising: a stratospheric platform (fig. 1, communication platform 110) having a payload controller (see column 5, lines 8-12 and column 6, lines 8-14, see “processors” or “processing”) and an antenna having a plurality of elements for generating a first beam and a second beam (see fig.1, see “12”, “13” and “17” to “19”, and fig.10, see “WV”, “WX”, “WY”, “WZ” and “TO GATEWAY”), a gateway station in communication with said stratospheric platform (see fig.1, communication between ground station 11 and satellite), said gateway station receiving a first signal having the first beam having interference from the second beam therein and receiving a second signal having the second beam having interference from the first beam therein (see column 2, lines 7-12).

Sherman does not specifically disclose a gateway station comprising first subtracting block for subtracting the second signal from said first signal to obtain the first beam, a gateway station comprising a second subtracting block for subtracting the first signal from said second signal to obtain the second beam.

Tanaka teaches a gateway station comprising first subtracting block for subtracting the second signal from said first signal to obtain the first beam (see fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-

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canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47), a gateway station comprising a second subtracting block for subtracting the first signal from said second signal to obtain the second beam (see fig.3, fig.6 and fig.7, see “INTERFERENCE REMOVAL SECTION 21”, and see “INTERFERENCE REMOVAL SECTION 22”, also see Title, Abstract, column 2, lines 30-38, and column 4, line 15 to column 6, line 46, see “subtracting”, “subtracted”, also see “interference-canceller” and it reads on applicant’s “subtracting”, and see column 15, lines 45-47).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Tanaka into the system of Sherman in order to provide a multistage interference canceller equipment and interference canceller method for use (see Tanaka, Abstract).

The combination of Sherman and Tanaka does not specifically disclose the gateway station weighting the second signal with a first weight to form a weighted second signal and wherein said first weight is a function of user position files.

Baire teaches the gateway station weighting the second signal with a first weight to form a weighted second signal (see fig.5, the weights W1, W2, W3 and W4, prior to box “interference Cancellation”) and wherein said first weight is a function of user position files (see column 8, lines 57-67 wherein proper weights are obtained adaptively, where adaptive variation as a function of user position file is inherently implied. In addition, Applicant’s specification page 10, lines 12-18 merely recites “the user position files”. However, it fails to further define what a “the user position files” is. Therefore,

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Baire does indeed teach Applicant's claimed limitation with a broadest reasonable interpretation).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Baier into the system of Sherman and Tanaka in order to allow channel impulse response to be determined in an improved manner, such that the determination of the channel impulse responses are resistant to interference source (see Baire, column 1, line 66 to column 2, line 2).

6. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685) and Rouffer et al (US 5,410,731).

Regarding claim 5, the combination of the combination of Bella, Sherman and Tanaka teaches claim 1. The combination of the combination of Bella, Sherman and Tanaka does not specifically disclose the payload controller comprises a demultiplexer for receiving control signals.

Rouffer teaches the payload controller comprises a demultiplexer for receiving control signals (fig.3, see the connection between demultiplexer 8 and central control 9, and see column 3, lines 65-68).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Rouffer into the system of Bella, Sherman and Tanaka in order to provide a simpler, cheaper way of solving the problem

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that is based on using a system which can be modified as a function of market requirements (see Rouffer, column 2, lines 3-6).

Regarding claim 6, the combination of Bella, Sherman and Tanaka teaches claim

1. The combination of Bella, Sherman and Tanaka does not specifically disclose the demultiplexer generates a plurality of element control signals.

Rouffer teaches the demultiplexer generates a plurality of element control signals (fig.3, see the connection between demultiplexer 8 and central control 9, and see column 3, lines 65-68).

Therefore, it would have been obvious for one of ordinary skill in the art at the time the invention was made to provide the teaching of Rouffer into the system of Bella, Sherman and Tanaka in order to provide a simpler, cheaper way of solving the problem that is based on using a system which can be modified as a function of market requirements (see Rouffer, column 2, lines 3-6).

Regarding claim 7, the combination of Bella, Sherman, Tanaka and Rouffer further teaches the element control signals are coupled to an RF feed, and the RF feed is coupled to the plurality of elements of the phased array antenna (see Sherman, fig.10 and fig.11).

7. Claims 9, 10 and 12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Bella (US 5,765,098) in view of Sherman (US 5,966,371) and further in view of Tanaka et al (US 6,157,685) and Official notice.

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Regarding claim 9, the combination of the combination of Bella, Sherman and Tanaka teaches claim 1. The combination of the combination of Sherman and Tanaka does not specifically disclose the gateway station further comprises a multiplexes/demultiplexer. However, the examiner takes Official notice that such feature as recited is very well known in the art.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to modify the above teaching of Bella, Sherman and Tanaka for providing a method as claimed, for multiplexing/demultiplexing the signals.

Regarding claim 10, the combination of the combination of Sherman and Tanaka teaches claim 1. The combination of the combination of Bella, Sherman and Tanaka does not specifically disclose the multiplexes/demultiplexer comprises a code division multiplexes/demultiplexer. However, the examiner takes Official notice that such feature as recited is very well known in the art.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to modify the above teaching of Bella, Sherman and Tanaka for providing a method as claimed, for multiplexing/demultiplexing the signals.

Regarding claim 12, the combination of the combination of Bella, Sherman and Tanaka teaches claim 1. The combination of the combination of Bella, Sherman and Tanaka does not specifically disclose the terrestrial network comprises the Internet. However, the examiner takes Official notice that such feature as recited is very well known in the art.

Therefore, it would have been obvious to one of ordinary skills in the art at the time of the invention was made to modify the above teaching of Bella, Sherman and Tanaka for providing a method as claimed, for the terrestrial network comprises the Internet.

Response to Arguments

8. Applicant's arguments with respect to claims 1-26 have been considered but are moot in view of the new ground(s) of rejection.

On page 10 of applicant's remarks, applicant argues that "the Tanaka reference also does not teach or suggest the use of a stratospheric platform. In fact, the words "stratospheric platform" and "phased array antenna" cannot be found anywhere in the Tanaka reference. Therefore, even if the references are combined the elements of claim 1 are not found in the combination".

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986). In this case, Bella (newly cited) indeed teach or suggest the use of a stratospheric platform (see fig.1a, see satellite) and "phased array antenna" (see column 8, lines 19-25), and the combination of the references indeed teaches applicant's invention.

Conclusion

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nghi H. Ly whose telephone number is (571)272-7911. The examiner can normally be reached on 9:30am-8:00pm Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Dwayne Bost can be reached on (571) 272-7023. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Nghi H. Ly

/Nghi H. Ly/
Primary Examiner, Art Unit 2617